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Rationale

The protection of Intellectual Property (IP) has been in place, in one form or another, eversince time immemorial. However, intellectual property protection, in its modern sense, could be traced to the Paris Convention on Patents (1883), Berne Convention (1886), among others. The realm of IP protection assumed further significance with the advent of the various conventions during the 20th century especially with the conclusion of the Convention on Biological Diversity (CBD) (2002) and Trade Related Intellectual Property Rights (TRIPS) (1994).

The CBD, TRIPS and such other Agreements have been interpreted in various ways; however, a review of the same reveals that the CBD and the TRIPS offer both opportunities and challenges to different stake holders, in the sense that the provisions in the CBD are more in tune with the intellectual property interests of the custodians of Traditional Knowledge, whereas the TRIPS Agreement appears to be more supportive of the developed countries and Multinational Corporations.

As has been rightly observed by M.R. Bhagavan, the renowned Science Policy Expert, the New Intellectual Property Regime that has come into being has vital linkages with the revolution in New Generic Technologies (NGT)- Information and Communication Technology (ICT) and Biotechnology in particular. The new generic technologies, by virtue of being capital and research intensive, together with its monopoly control by the Multinational Corporations, seem to have ushered in a new era characterized by new forms of hegemony and control, with far reaching implications to developing countries. In that sense, the new IPR regime with its extended scope and reach, has not only introduced new dimensions to the development debate but seems to be shaping the nature and direction of contemporary international relations as well.

The Biodiversity associated Traditional Knowledge (TK) has been one of the most contentious issues/concerns in the contemporary debates on intellectual property rights.

The concerns are found to emerge from the lack of consensus on how to protect indigenous resources, as also due to the complexities involved in defining and classifying such resources within the framework of Intellectual Property Rights. Further, the IP protection of Traditional Knowledge acquired critical significance, rather emerged as a problematic area, in wake of the conclusion of the international Agreements such as the CBD and the TRIPS.

It is widely argued that there are many provisions in the CBD that are in favor of the IP protection of Traditional Knowledge (TK) that falls in the public domain. Conversely, it is argued that the TRIPS Agreement contain a number of provisions that are critical of and discriminatory to the custodians of the TK, most often limiting the opportunities and options available to the custodians of such resources the world over. There are many studies that substantiate the same. The experience in the intellectual property protection of Traditional Knowledge of India and Kerala is no different and hence, there is ample scope for an examination of the Indian experience in the IP protection of Traditional Knowledge which will be of immense significance both form academic and policy formulation perspectives. This is precisely the rationale of this Study.

Nature and Scope

The intellectual property protection in general and the protection of Traditional Knowledge in particular acquired hitherto unknown complexities towards the last decade of 20th century, especially since the conclusion of the WTO (1995) Agreement under the aegis of GATT (1994). Unlike previous Rounds, the Uruguay Round of GATT negotiations that began during 1986 incorporated a set of new themes, prefixing the term of Trade-TRIPS/TRIMS/GATS and WTO. In turn, the nature, scope, extent and duration of the level of IP protection were redefined. The Traditional knowledge, (knowledge innovations and practices of indigenous and local communities embodying traditional life styles relevant for the conservation and sustainable use of biological diversity) and its

protection were bought under the ambit of the GATT Agreement and were made enforceable by the WTO.

As a matter of fact, the Traditional Knowledge has been widely recognized for its role in the economic, social, cultural life and development of the people. This realization has been heightened in recent years as a result of the increased awareness of the environmental crisis; the role of new generic technologies, production methods and products in contributing to this crisis and a growing appreciation that local communities have a wide range of Traditional Knowledge, practices and technologies that are environmentally sound or friendly and that have been making use of the manifold and diverse biological and genetic resources for food, medicines and other uses. In particular, the recent increased awareness of the value of biodiversity in view of these applications in various fields has highlighted the role and critical importance of Traditional Knowledge.

The knowledge of local communities, farmers and indigenous peoples on how to use the many forms and types of biological resources and for many functions, as well as on how to conserve these resources has been now recognized as being a precious resource that is critical to the future development or even survival of humankind. At the same time, this precious knowledge is maintained and thrives in the context of the traditional ways of social and economic life and customary practices of the traditional communities. The viability and sustainable development of these communities also require that rights and access to natural resources such as land, forest, water and the preservation of the environment within which they live and work are ensured. Moreover, their rights to the knowledge, to the use of their knowledge and to the products arising from such use need to be recognized. The misappropriation of their resources, knowledge or the products of their knowledge would not only deprive them of their rights, but also adversely affect the conservation and use of the knowledge and biodiversity.

The importance of protecting and preserving indigenous Traditional Knowledge has been recognized in several international instruments, including the Universal Declaration of Human Rights. In 1992, the Convention on Biological Diversity (CBD) recognized the value of traditional knowledge in protecting species, ecosystems and landscapes, and incorporated the language regulating access to it and its use. It soon became apparent that implementing these provisions would require that international intellectual property agreements would need to be revised to accommodate them. This seems to have become even more pressing with the adoption of the World Trade Organization Agreement (WTO) and the RIPS, which established rules for creating and protecting intellectual property that could be interpreted to contradict the agreements made under the CBD.

In response, the states that had ratified the CBD requested the World Intellectual Property Organization (WIPO) to investigate the relationship between intellectual property rights, Biodiversity and Traditional Knowledge. WIPO began this work with a fact finding mission in 1999. Considering the issues involved with biodiversity and the broader issues in TRIPS, WIPO established the Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore. Traditional knowledge has always been an easily accessible treasure and thus has been susceptible to misappropriation, particularly.

The collective human right of the indigenous and local communities has been increasingly recognized by the international institutions, such as the the International Labor Organization (ILO), the Declaration on the Rights of Indigenous Peoples (2007). The Rio Declaration (1992), endorsed by the Presidents and Ministers of the majority of the countries of the world, recognized indigenous and local communities as distinct groups with special concerns that should be addressed by states. Initial concern was over the territorial rights and traditional resource rights of these communities.

There are three broad approaches towards the protection of Traditional Knowledge: the first emphasizes protection of traditional knowledge as a form of cultural heritage; second, as a collective human right; and the third taken by the WTO and WIPO, that investigates the use of existing or novel Sui generis measures.

The CBD has several provisions that acknowledge this and also that aim at protecting community rights, the key provision being Art. 8(j). The contribution and nature of community knowledge and community rights are not recognizes in the TRIPS Agreement. There are inherent tension between CBD and TRIPS. Benefit sharing arrangements, a key aspect of the CBD is the one that recognize the sovereign rights of the states over their biodiversity and knowledge, and that gives the state the right to regulate access. In turn, it enables the state to enforce its rights on arrangements for sharing benefits. Under the TRIPS, there is no provision for the patent holder on claims involving biological resources or related knowledge to share benefits with the state or communities in countries or origin.

The countries of Asia particularly India have a rich cultural heritage, including literature, arts and crafts, music, visual arts, ceremonies, architecture associated with particular sites, as well as forms of Traditional Knowledge related to forestry, medicines and medical practices, agriculture and conservation and sustainable use of biological diversity. There is severe concern at the widespread and unfair exploitation of the cultural heritage of these nations for commercial and business interests. Important elements of Traditional Knowledge art forms and folklore are being lost rapidly in the absence of proper legal protection mechanisms at national, regional and local levels. It is widely argued that imposition of the current IPR systems will not be able to protect TK to the desired extent.

The Government of India has brought about many changes in its IPR laws to ensure them TRIPS compliance during the past decade. The Patent Amendment Act was passed in 1999, the second in 2002 and the last in 2005. Biological Diversity and associated

Traditional Knowledge systems are India's capital assets, which need to be conserved and sustainably utilized for the socioeconomic development of country. The protection of Biodiversity associated Traditional Knowledge seems to have raised a number of policy issues in India, notably on matters related to the objectives and modalities of such protection and its impact and implications for its intended beneficiaries. Such issues are extremely complex, since there are broad differences on the definition of the subject matter, the rationale, for protection and means for achieving its purposes.

As is well known, Kerala has a rich stock of Biodiversity associated Traditional Knowledge. The issues and concerns in its protection have opened up a major debate in the state especially on matters related to Access and Benefit Sharing (ABS), Prior Informed Consent (PIC) as well as participation of indigenous communities in the application of the Biodiversity related Traditional Knowledge, in the wake of increasing awareness of Bio-piracy and Bio-prospecting the classic illustration in this regard is the experience of Kani Tribes. The Kani Tribes are found in the Western Ghats of the state and are considered to be the legitimate custodians of the Traditional Knowledge associated with Arogyapacha -a traditional herb that holds considerable therapeutic and medicinal values-have been said to be deprived of their legitimate interest in this regard. Quite naturally, there is ample scope for a critical examination of the IP protection of Biodiversity associated Traditional Knowledge in India in general and Kerala in particular.

Objectives of the Study

- To trace the genesis and growth of the New Intellectual Property Regime
- To review the challenges and opportunities and plausible options open to all stake holders in the wake of the CBD and TRIPS

- To explore the international initiatives in the Intellectual Property protection of Biodiversity associated Traditional Knowledge.
- To explore the Indian experience in the IP protection of Biodiversity associated Traditional Knowledge
- To explore the Kerala experience in the IP protection of Biodiversity associated Traditional Knowledge

The Study was initiated with certain important Research Questions which are placed below as the Hypotheses.

- Institutionalization of the Intellectual Property Rights through the TRIPS appears to safeguard the interests of the multinationals and their parent countries compared to developing countries.
- The new IPR regime appears to have widened the nature, scope and patentability of Biodiversity associated Traditional Knowledge with huge challenges to the developing countries like India.
- The provisions in the CBD such as the ABS, PIC, Article 8(j)-appear to be in tune with the interests of the indigenous people and communities who are the legitimate custodians of Biodiversity associated Traditional Knowledge.
- The provisions in the TRIPS seem to be skewed in favor of the corporate and commercial interest of multinationals even in the context of intellectual property protection of Biodiversity associated Traditional Knowledge.

- India, as a signatory to the WTO Agreement, has complied with the TRIPS provisions. On the other hand, India appears to have introduced various legal executive, administrative and institutional mechanisms in defense of the IP protection of Biodiversity associated Traditional Knowledge.
- The Biodiversity rich state of Kerala, in tune with the national and international policies, also seems to have initiated various measures in the IP protection of Biodiversity associated Traditional Knowledge. However, it appears that the benefits of such initiatives are yet to reach in a meaningful manner, especially the protection of the legitimate interests of the indigenous people and communities who are the legitimate custodians of Biodiversity associated Traditional Knowledge and its applications.

Source Material and Methodology

A brief survey of the literature on the problem under examination suggests that the material in this direction is mostly western in origin, with its characteristic bias and prejudice. This study is based on the data collection from primary sources and secondary sources. Primary Sources includes Reports, Agreements, Working Papers, and Studies from the Institutions and Agencies such as World Intellectual Property Organization (WIPO), Third World Network (TWN), Seed, Navadhanya, World Trade Organization (WTO), Trade Related Intellectual Property Organization (TRIPS), GRAIN, Honeybee, Traditional Knowledge Digital Library (TKDL) and various Government Agencies and individuals associated with IPR especially those related to the biodiversity and traditional knowledge. The Kerala experience has also been examined through field surveys and interviews.

Field study, surveys and interviews were conducted to collect data. Comparative analytical method has been employed in analyzing the data. The study has also employed interdisciplinary analytical mode of investigation, drawing insights from cultural, legal, social, political and economic milieu. APA Reference style has been followed in the preparation Notes, References and the Bibliography

Organization of the Study

From the analytical point of view this Study has been divided into Five Core Chapters, besides the Introductory Chapter (**Ch. I**) and the Concluding Chapter (**Ch. VII**).

The Second Chapter (Ch. II) enquires into the genesis and growth of intellectual property rights and explores the historical trajectory of the great Conventions and the correlation of intellectual property rights with other Agreements such as, Convention on Biological Diversity (CBD), World Intellectual Property Organization (WIPO), International Union for the Protection of New Plant Varieties of Plants, Food and Agricultural Organization.

Third Chapter (Ch.III) examines the nature and characteristics of Traditional Knowledge, its various forms and value with a view to define and conceptualize the TK and its protection. This chapter also traces the international legal initiatives, Conventions and Declarations in this regard.

Fourth Chapter (Ch.IV) efforts have been made in Chapter Four to assess the correlation between the TRIPS and the CBD viz-a-viz the challenges and opportunities in the protection of Biodiversity associated Traditional Knowledge.

Fifth Chapter (Ch.V) reviews the Indian experience in the protection of Biodiversity associated Traditional Knowledge. Here, efforts have been made to examine as to how India has ensured compliance with TRIPS provisions on the one hand and initiated

various legislative, legal, institutional and administrative measures taking recourse to the beneficial provisions in the CBD such as Access and Benefit Sharing, Prior Informed Consent etc. which are generally consistent with the legitimate IP interest of the custodians of the Traditional Knowledge on the one hand and ensured compliance with the TRIPS, on the other.

Sixth Chapter (Ch.VI) In Chapter Six, efforts have been made to examine the experience of Biodiversity rich state of Kerala in the backdrop of international initiatives and national policies. This chapter also contains a comprehensive discussion on the experience of Kani Tribes in terms of ABS and PIC.

Chapter Seven (Ch.VII) Contains a comprehensive summary of the discussions in the Five Core Chapters, followed by major Observation which may through certain meaningful insights academically, as also from the policy making perspectives.

Major Findings

The central objective of the Study has been to examine the experience of Traditional Knowledge rich developing countries like India in the IP protection of Traditional Knowledge, in the wake of the international initiatives in the regard; especially in the wake of the conclusion of the TRIPS and CBD. We have examined the Indian experience as well as in the experience of Kerala in this regard, in the backdrop of the changing nature of the IP protection particularly in the context of the provisions of the TRIPS and CBD.

The realm of protection of IP, in its modern sense, which could be traced to the Paris Convention on Patents (1883), it acquired considerable significance with the conclusion of TRIPS during 1994 and the CBD (2002). The New Intellectual Property Regime that has come into being has vital linkages with the revolution in New Generic Technologies

(NGT) - Information and Communication Technology (ICT) and Biotechnology in particular.

The CBD, TRIPS and such other Agreements have been interpreted in various ways; however, a review of the same reveals that the CBD and TRIPS offer both opportunities and challenges to different stake holders, in the sense that the provisions in the CBD are more in tune with the intellectual property interests of the custodians of Traditional Knowledge, whereas the TRIPS Agreement has been more supportive of the developed countries and Multinational Corporations.

The TRIPS Agreement was enforced on most countries especially developing countries in a unilateral and high hand manner. There is evidence to suggest that the provisions in TRIPS benefit the Corporate interests and their parent countries in more ways than perceived. Conversely, most of such provisions, especially those related to article 27.3 (b) have had deleterious effect on the protection and management of IP related to biodiversity and traditional knowledge. Many of the provisions in TRIPs Agreement are in direct conflict with the CBD, UPOV, UNCTAD and FAO.

The nature and features of the IPR protection in the wake of the TRIPS Agreement and the CBD, suggest that there are contentious tension between the CBD and TRIPS. The most controversial point of the TRIPS Agreement is article 27.3 that requires the state to include plants and animals within the scope of patenting. The contentious areas in the negotiations under the WTO and the CBD have been on matters related to the protection of biodiversity and traditional knowledge. Protection of such resources has been confronting a severe crisis primarily due to the provisions of patenting of life forms enforced by the TRIPS Agreement.

Conversely, many of the provisions in the CBD are found to be in tune with the interest of developing countries. The mismatch in this regard is most evident in the article 16(5) of the CBD and article 27.3 (b) of TRIPS. Article 14.4, 14.5 and 15.1 of the CBD reinforce

the need for Access and Benefit Sharing (ABS) and Prior Informed Consent (PIC). In that sense, there are conflictual areas in the TRIPS Agreement and CBD which demand a review of such provisions so that the minimum interest of all stake holders are protected. It would also restrict the opportunities for manipulation and unfair dealings through bio-piracy and bio-prospecting.

The CBD aims to set up an international framework for the preservation and utilization of the world biological resources. The objectives of the CBD include the conservation of biological diversity, the sustainable use of biological diversity components and the fair and equitable sharing of the benefits arising out of the utilization of genetic resources.

There is an inherent tension between the granting of intellectual property rights under the TRIPS with the objectives of the CBD. There are differences in rationale, origin and framework of the CBD and the TRIPS Agreement. TRIPS, has major commercial objectives that largely benefit strong private firms. The establishment of CBD was prompted mainly by the growing concern over the rapid worldwide loss of biodiversity, recognition of the important role of the Traditional Knowledge and the rights of local communities that develop and hold the knowledge and the need to regulate access to and the sharing of benefits deriving from the conservation and sustainable use of biodiversity.

India and other developing countries have a major share of such resources, the region's countless varieties of plants, trees and genetic material with innumerable potential applications. The value of biodiversity associated resources in the global market has been astonishingly high which would explain recent surge in bio-prospecting. The Indian experience reveals at the national level, a number of initiatives have been made to protect biodiversity associated traditional knowledge. It includes Indian Forest Act 1927, Wildlife (Protection) Act 1972, Seeds Act 1966 and the Drugs and Cosmetics Act 1940. Of late the Protection of Plant varieties and Farmers Right Act of 2001 and Indian Biodiversity Act 2002 enacted to protect the Biodiversity and associated resources.

The bio-piracy cases and infringement of rights over biodiversity associated traditional knowledge have been on the increase in India, as also in other bio-rich developing societies. The mismatch in the provisions related to the protection of such resources in the international conventions especially those in the CBD and TRIPS Agreement have served the corporate interests of the multinational companies and countries that have monopoly over biotechnology innovations. The provisions related to the ABS and PIC in the CBD are capable of offering remedy to many of the grievances advanced by the victims of bio-piracy. The Indian experience also reveals that there have been several cases of bio-piracy of traditional knowledge from India. The misappropriation of resources related Indian herbal plants such as Neem, Turmeric, Aswagantha, karela, Jamun, Brinjal etc. are illustrated the same.

The Kerala experience was examined with the focus on the Kani Tribes in the background of provisions related to ABS and PIC, the people of Kani tribe are the legitimate custodians of Arogyapacha, a traditional herb found in Kerala. The commercial application of the herb Jevani, with the help of TBGRI resulted in the deprivation of adequate benefit to the community. The ABS mechanism provides scope for PIC and adequate participation of the indigenous communities in the development and commercial application of the products. In our analysis we are yet to get any documentary evidence supportive of the inclusion of Kani Tribe in the entire process, rather the benefits of commercial application of such resource have been left in hands of intermediaries and institutions which would resemble to instance of bio-piracy.

The protection of Traditional Knowledge has raised a number of policy issues in India, notably on matters related to the very objectives and modalities of such protection and its impact and implications for its intended beneficiaries. Such issues are extremely complex, since there are broad differences on the very definition of the subject matter, the rationale, for protection and means for achieving its purposes.

In brief, the examination of the IP protection experience of India in the backdrop of the TRIPS and CBD allows us to suggest that the TRIPS provisions are generally in favour of the owners of the patent, were as the provisions in the CBD are supportive of the interest of the indigenous community and people who are the custodians of biodiversity associated Traditional knowledge. We have found that there are many grey areas in the very content, definition, application and the interpretation of the provisions of the TRIPS and the CBD. However, there is ample scope for initiating various regulatory measures globally, as also at the national, regional and local levels. In the absence of adequate regulatory measures, the deleterious implications of the IP protection shall over weigh the beneficial dimension of the IP protection.